



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

[Handwritten signature]

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/731,895

12/08/2000

Hyeon-Ho Son

8733.337.00

1204

30827

7590

11/01/2005

MCKENNA LONG & ALDRIDGE LLP
1900 K STREET, NW
WASHINGTON, DC 20006

EXAMINER

NGUYEN, DUNG T

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/731,895

Applicant(s)

SON, HYEON-HO

Examiner

Dung Nguyen

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 10-14, 19-21, 27-31 and 35 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-9, 15-18, 22-26, 32-34 and 36-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/9/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/16/2005 has been entered.
2. Applicant's amendment dated 07/14/2005 has been received and entered. By the amendment, claims 1-9, 15-18, 22-26, 32-34 and 36-39 are remain pending in the application.
3. Applicant's arguments dated 12/08/2004 have been considered but are moot in view of the new ground(s) of rejection:

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the center electrode forming below the slit and same layer as a gate line must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure

Art Unit: 2871

must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4, 6-7, 15, 22-24, 32-34, 36-37 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka et al., US Patent No. 6,952,249, in view of Takeda et al., US Patent No. 6,724,452.

Regarding the above claims, Matsuoka et al. disclose a liquid crystal display (LCD) device (figures 5A-5B) comprising:

- first and second substrate (50, 60);
- gate and data lines (51, 56) formed on the first substrate (502);
- a switching device (TFT 54);

Art Unit: 2871

. a pixel electrode (58) formed on the first substrate (50), wherein the pixel electrode having central portion and side edge portions being bent toward the second substrate (i.e., convex shape)(see figure 5B);

. a common electrode (61) formed on the second substrate (60), wherein a first distance of a central region of the pixel electrode from the common electrode is greater than a second distance of the side edges of the pixel electrode from the common electrode (figure 5B);

. a center electrode (data line 56) formed below the central portion and corresponding to the data line (56);

Matsuoka et al, however, do not disclose a slit being formed on the pixel electrode and multiple domains within the pixel region during an operation. Takeda et al. do disclose that slits can be formed in the pixel electrodes, so as a multi-domain pixel would be formed (e.g., between side edge pixel electrode and a common electrode) for improving the viewing angle in an LCD device (col. 86, lines 25-31). Therefore, it would have been obvious to one skilled in the art at the time of the invention was made to employ slits in the Matsuoka et al device as shown by Takeda et al. in order to improve display characteristics (e.g., viewing angle) in an LCD device (col. 86, lines 25-31).

7. Claims 8-9, 16-18, 25-26 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka et al., US Patent No. 6,952,249, in view of Takeda et al., US Patent No. 6,724,452, further in view of Applicant admitted prior art (APA), figure 5.

Regarding claims 8-9, 16-18 and 26, the modification to Matsuoka et al discloses the claimed invention as described above except for a rib forming on the second substrate. APA's figure 5 does disclose a rib (19) formed a common substrate (17) to define multi-domains.

Art Unit: 2871

Therefore, it would have been obvious to one skilled in the art at the time of the invention was made to employ a rib on a substrate opposed to a pixel electrode substrate as shown by APA in order to improve a wide-viewing angle in an LCD device.

Regarding claims 25 and 38, the modification to Matsuoka et al disclose the LCD having the rib forming on the second substrate as described above; the modification to Matsuoka et al do not disclose the LCD device including at least two ribs. One of ordinary skill in the art would have realized the desire to form at least two ribs over pixel electrodes for forming multi-domains in the pixel electrode (e.g., more than four domains in each pixel electrode). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the Young 's LCD device as a multi-domain LCD device because it is a common practice in the art to improve a wide-viewing angle in a multi-domain LCD device.

Allowable Subject Matter

8. Claim 5 is allowed.

9. The following is a statement of reasons for the indication of allowable subject matter: none of the prior art of record discloses or suggests alone or in combination that an LCD device in which a pixel electrode having a slit and a convex-shaped side edge, a center electrode forming below the slit and same layer as a gate line as set forth in claim 5.

Art Unit: 2871

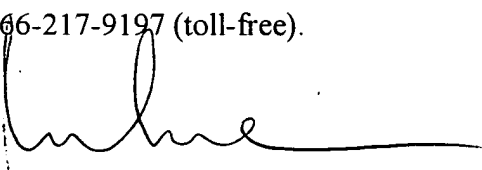
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Nguyen whose telephone number is 571-272-2297. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DN
10/29/2005



Dung Nguyen
Primary Examiner
Art Unit 2871